ACC in Power Plants

ARPA-E Meeting

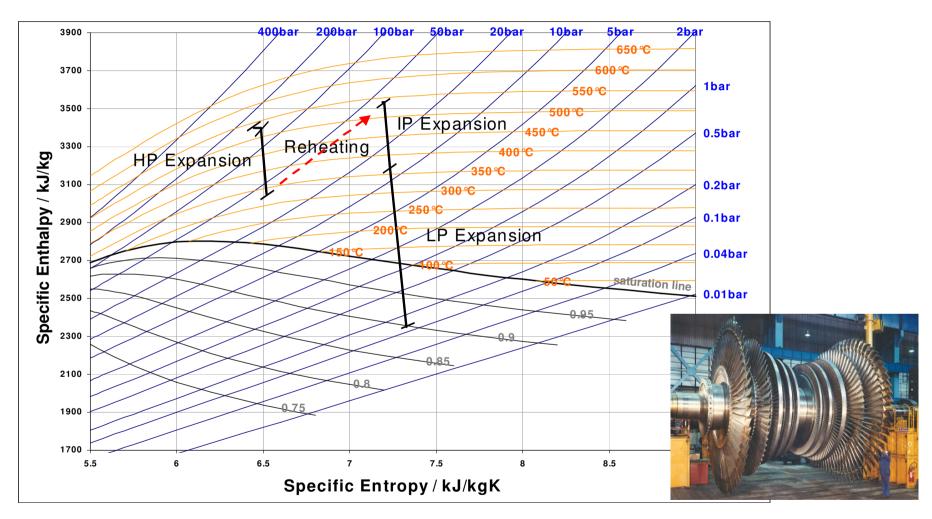
Dr O. Le Galudec

Washington DC, 28th March 2012



A Steam Turbine Expansion line



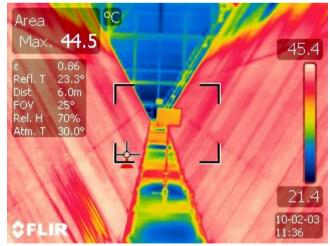


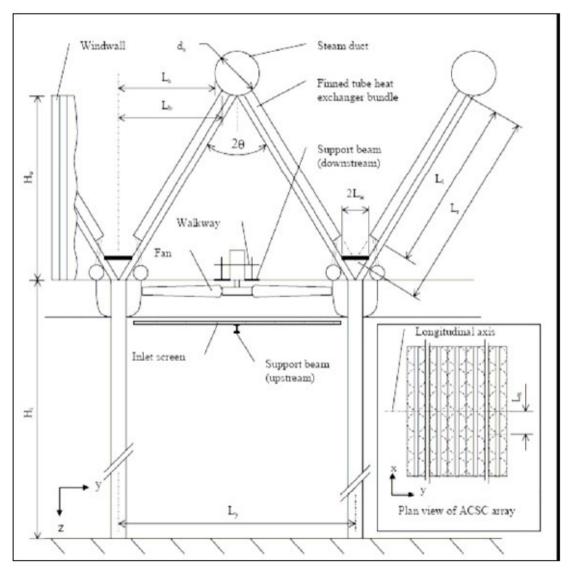
Cooling is needed at the end of the expansion line.

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Air Cooled Condenser is available Technology ALSTOM







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ACC key features

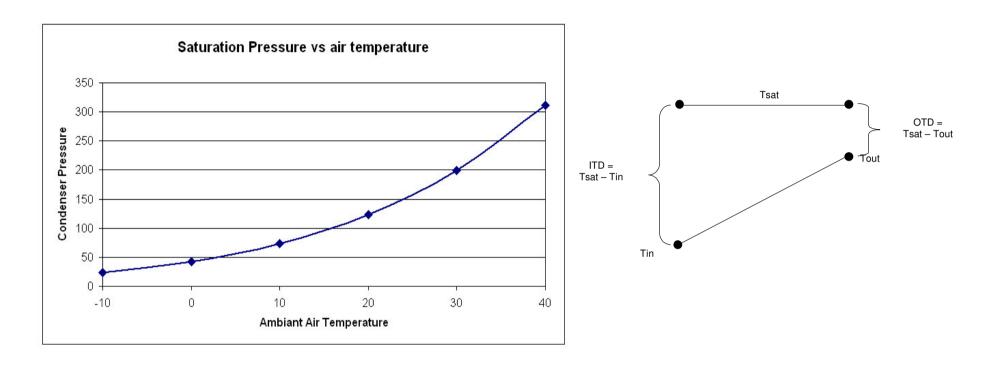


- No Water Consumption
- ➤ No visible plume
- > No icing risk in vicinity
- High availability
- Proven Technology
- Test covered by Codes & Standards
- Performances Impacted by air temperature and wind



ACC: straight from W/S properties





Air Temperature	°C	-10	0	10	20	30	40
Air temp. + 30°C	°C	20	30	40	50	60	70
Saturation P	mbar	23	42	74	124	199	312
Specific Volume	m3/kg	57,8	32,9	19,5	12,0	7,7	5,0

Some ALSTOM turnkey Plants with ACC



- ➤ Aluar 1 & 2 Combined Cycle Argentina
- ➤ Hays 3 & 4 Combined Cycle Texas / USA
- Gend Ringvart Combined Cycle Belgium
- Baudour Combined Cycle Belgium
- Esch sur Alzette Combined Cycle Luxembourg
- ➤ Gissi 1 & 2 Combined Cycle Italy
- ➤ Langage Combined Cycle UK
- ➤ Shotton CHP Combined Cycle UK
- Medupi 1-6 Steam tails South Africa
- Kusile 1-6 Steam tails South Africa
- San Reus Combined Cycle Spain



ACCs are not uncommon.

Even in places where water is available.



